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(54) Blister package

(57) A blister pack (1) for a plurality of doses of a medicament comprises an elongate base element (2), which is provided with a series of recesses (3) which project on the front side. Each recess accommodates a dose of the medicament.

The blister pack also comprises a cover sheet (5) which covers the recesses, so that each dose of the medicament is enclosed in a recess.

The blister pack can be divided into discrete sections which each comprise a recess in which there is one dose of the medicament.

A flat self-adhesive label sheet (10) is arranged against the rear side of the cover sheet. On the side which is away from the self-adhesive side, the label sheet is provided with readable information.

When a discrete section of the blister pack is detached, a section of the label sheet, the label, remains stuck to the detached section of the blister pack.

The self-adhesive nature of the label is such that the label can be detached by hand from the blister pack and can be stuck to a different base, in particular a patient records card, by means of the self-adhesive side.

The label (10) projects beyond the periphery of the base element in the direction which is transverse to the longitudinal direction of the blister pack in strip form, the projecting part of the self-adhesive substrate of the label being covered by a backing layer (20) on the self-adhesive side.

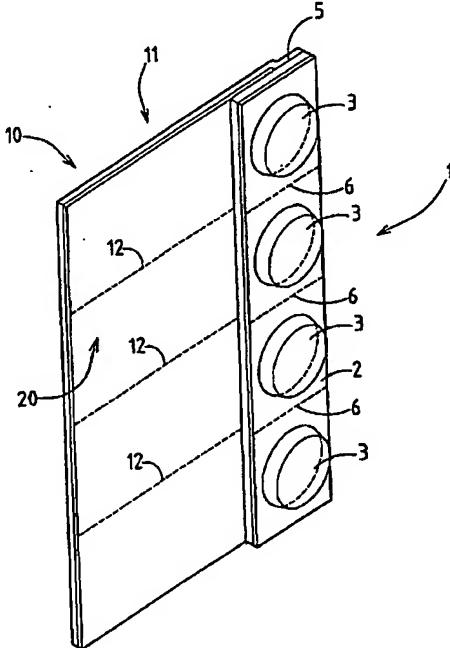


FIG. 1.

**Description**

[0001] The present invention relates to a blister pack according to the preamble of claim 1, in which blister pack a plurality of doses of a medicament are packaged. [0002] Blister packs for medicaments are generally known. In one embodiment which is in widespread use, the blister pack has a base element in the form of an elongate strip, which base element is provided in the longitudinal direction with a series of recesses which project on the front side of the base element. The base element is often made from a suitable plastics material, for example PVC, the recesses being obtained, for example, by injection-moulding or, as is often the case, by a thermoforming process, for example vacuum forming. The base element may be transparent. In a variant, the base element is made from aluminium or some other foil material, if appropriate a multilayer material.

[0003] A dose of the medicament in question is accommodated in each recess of the blister pack, generally in the form of a pill or capsule.

[0004] The known blister pack also comprises a cover sheet which is arranged over the rear side of the base element and covers the recesses, so that each dose of the medicament is enclosed in its recess. The cover sheet is often made from aluminium foil, but may also be made from any other suitable material. The cover sheet may also have a multilayer structure. The adhesion of the cover sheet to the base element can be obtained in various ways, for example by means of an adhesive bond or a fusion weld.

[0005] The base element, and generally also the cover sheet, is provided with transversely oriented perforations which make it easy to divide the blister pack into discrete sections, which each include one recess in which one dose of the medicine is accommodated.

[0006] In a hospital, an accurate record of the medicaments administered must be kept for each patient. To limit administrative work, it is known for a label sheet to be arranged against the rear side of the cover sheet of the blister pack. In the known pack, the said label sheet comprises a single-layer substrate which is self-adhesive on one side, with the exception of a narrow edge strip on opposite edges of the label sheet. The label sheet is stuck to the rear side of the cover sheet of the blister pack by means of the said self-adhesive side. Furthermore, the label sheet is provided with perforations which coincide with the perforations in the base element and the cover sheet of the blister pack, so that when a discrete section is removed from the blister pack, a section of the label sheet - a separate label - remains stuck to the section of the base element and cover sheet of the blister pack which has been removed. The label extends over the location where the medicament has to be pressed through the breakable part of the cover sheet of the blister pack. On that side of the substrate which is away from the self-adhesive side, the label is provided with information, which information in-

cludes, in particular, the name of the medicament and the dose, but often also includes one or more further indications, such as the batch number, the expiry date, the drugs registration number. This information, or some of it, may be provided in a form which can be read by a person, but as an alternative or in combination may also be provided in machine-readable form, such as a barcode, a so-called two-dimensional barcode, etc.

[0007] When a dose of the medicament is administered to the patient in the hospital, the label is detached from the blister-pack section by taking hold of a non-adhesive edge strip of the label and pulling off the label. Then, the label which has been detached is stuck onto a different base, in particular onto the records card for the patient in question, once again using the self-adhesive action of the label. As a result, it is immediately clear which medicaments have been administered to the patient. If appropriate, the barcode is read using a suitable reader.

[0008] Although the above-described blister pack which can be divided into sections, having a detachable label assigned to each dose of medicament which is to be administered, allows simple administration, the known blister pack is not altogether satisfactory.

[0009] In particular, one drawback of the known blister pack is that an undesirably large amount of material is required for the pack. This has an adverse effect on the cost price and also leads to an undesirably large amount of waste in the hospital and to undesirable environmental pollution. Particularly if PVC or an environmentally polluting material of this type is included in the blister pack - for reasons of packaging technology - it is desirable to reduce the amount of packaging material.

[0010] It is an object of the present invention to provide an improved blister pack which can advantageously be used in a hospital in the manner explained above. It is a further object of the invention to provide an attractive method for the production of an improved blister pack of this type.

[0011] The present invention provides a blister pack according to the preamble of claim 1 which is characterized in that the label sheet projects beyond the periphery of the base element in the direction which is transverse with respect to the longitudinal direction of the strip-like blister pack, the projecting part of the substrate of the label sheet being covered on the self-adhesive side by a backing layer. In the specialist field, a backing layer of this type is also known as a release liner.

[0012] This measure according to the invention advantageously allows the width of the base element and the cover sheet which covers the base element to be greatly reduced compared to the width of the known blister pack for hospital use. In particular, it is possible to change to a narrow design of the base element and cover sheet of the blister pack which - without an additional detachable label as described above - is already available on the consumer market. The consumer version

has a minimal width which is wider than the dimension of the recesses only to a sufficient extent to ensure good adhesion of the base element and the cover sheet around the recess. The label according to the invention projects beyond the said narrow assembly of base element and cover sheet of the blister pack, the backing layer then preventing the projecting part of the label sheet from sticking undesirably to other objects or bases. It is easy to remove a section of the label sheet, which section forms a separate label, since it is easy to take hold of the label by means of the projecting part. In many cases, it will be possible for the self-adhesive part of the detached label, which was originally stuck to the rear side of the blister pack, to be stuck to the patient records card, in the same way as in the known pack. However, one advantage of the blister pack according to the invention is that it is now also possible, even after the label has been detached, to remove the backing layer from the label and to stick the label to the records card or some other base by means of the part of the self-adhesive side which is then exposed and still has a good level of adhesion. In this way, any problem involving the label not sticking or sticking insufficiently is eliminated, and consequently it is possible to prevent an insufficiently sticky label from coming off the records card or extra work being required in order to stick the label to the records card in some other way.

[0013] It will be clear that reducing the material required for the base element and the cover sheet of the blister pack results in an environmental advantage; it should be noted that these materials generally cause greater problems to the environment than the material which is used to form the label sheet.

[0014] Therefore, in the blister pack according to the invention, it is possible to match the width of the label to the information which is to be displayed without major drawbacks for the environment and the amount of waste produced. It is possible to retain the effect that the information on a label can easily be read by hospital staff, which means that the size of letters used to represent this information has to be sufficiently large. Furthermore, a relatively wide barcode can be applied to the label without difficulties.

[0015] In an advantageous embodiment, the backing layer of the label sheet extends as far as between the covering sheet of the blister pack and the self-adhesive substrate of the label sheet, in such a manner that the intervening backing layer locally, preferably in an edge region of the blister pack, prevents adhesion between the cover sheet of the blister pack and the self-adhesive substrate of the label sheet. This measure makes it easier to detach a label and reduces the risk of the backing layer unintentionally becoming detached in the area where it adjoins the base element.

[0016] It is conceivable for only the self-adhesive substrate of the label sheet to be printed, for example using a thermal printing device as is customary for self-adhesive labels. In a variant, it is possible for the backing

layer of the label sheet to be printed with information on the side which is away from the self-adhesive substrate.

[0017] In an advantageous embodiment, the label sheet only projects beyond the base element of the blister pack on one side. To make optimum use of the space, it is possible for the label sheet then to completely cover the back side of the cover sheet of the blister pack.

[0018] The invention also provides a method for producing the above-described blister pack with label, as described in claim 6.

[0019] The invention will be explained in more detail below with reference to the drawing, in which:

15 Figure 1 shows a perspective view of a preferred embodiment of the blister pack according to the invention,

Figure 2 shows the assembly of two blister packs which is used as a starting point in the method according to the invention, and

20 Figure 3 shows the label which is used in the method according to the invention.

[0020] Figure 1 shows a blister pack 1 according to the invention for a plurality of doses of a medicament, in this case for four doses.

[0021] The blister pack 1 comprises a base element 2 in the form of an elongate strip with a substantially rectangular outer periphery, which base element 2 is provided, in the longitudinal direction, with a series of recesses 3 which project on the front side of the base element 2.

[0022] Each recess 3 is designed to accommodate one dose of the relevant medicament, which dose is in the form, for example, of a pill or capsule.

[0023] The blister pack 1 also comprises a cover sheet 5 which covers the rear side of the base element 2 and covers the recesses 3, so that each dose of the medicament is enclosed in its recess 3.

[0024] The cover sheet 5 may be such that the pill or capsule can be pressed through the cover sheet 5, and/or it may be provided for it to be possible to pull the cover sheet 5 off the base element 2.

[0025] The width of the blister pack 1 is limited to a width which ensures that, where the base element 2 and the cover sheet 5 are stuck to one another, an annular region of at least a few millimetres is present around each recess. This adhesion can be obtained, for example, using a suitable glue but also, for example, by means of a fusion weld. By way of example, the total width of the base element and the cover sheet above it in the blister pack is 2 cm.

[0026] The base element 2 and the cover sheet 5 attached to it are provided with transversely oriented perforation lines 6 between the recesses 3, which perforation lines make it easy to divide the blister pack 1 into discrete sections by hand, which sections each include a single recess 3 containing one dose of the medicament.

[0027] In a variant which is not shown, transverse incisions are made in the base element 2 and the cover sheet 5 instead of perforation lines 6. This reduces the force required to detach a section from the blister pack.

[0028] A flat label sheet 10 is arranged on the rear side of the cover sheet 5 of the blister pack 1. The label sheet 10 comprises a substrate 11 which is self-adhesive on one side and is stuck to the rear side of the cover sheet 5 by means of the said self-adhesive side. The label sheet 10 is also provided with perforation lines 12 which match the perforation lines 6 in the base element 2 and the cover sheet 5 of the blister pack 1, so that when a discrete section of the blister pack 1 is removed, a section of the label sheet 10, which forms a label, remains stuck to the blister-pack section which has been removed.

[0029] Each section of the label sheet 10 is provided, on the side away from the self-adhesive side, with information, such as the name of the medicament, the dose, the batch number, the expiry date, the drug registration number, etc. This information may be applied in a form which can be read by a person and/or in machine-readable form, for example in the form of a barcode. The information may, for example, be applied to the substrate 11 which is suitable for thermal printing using a thermal printing device. Preferably, at least the name of the medicament and the dose are shown in such a way that they can be read by a person.

[0030] The label sheet 10 projects beyond the coinciding peripheries of the base element 2 and the cover sheet 5 in the direction which is transverse to the longitudinal direction of the strip of the blister pack, the projecting part of the substrate 11 of the label sheet 10 being covered by a backing layer 20 on the self-adhesive side. The backing layer 20 is used in the first instance to prevent the self-adhesive side of that part of the label sheet 10 which projects outwards from unintentionally sticking to all kinds of bases.

[0031] The excess width of the label sheet 10 compared to the base element 2 and cover sheet 5 of the blister pack 1 allows the desired information to be accommodated on each label which is to be detached in a clearly legible manner while using a minimal amount of material for the base element 2 and the cover sheet 5 of the blister pack 1.

[0032] As can be recognised in Figure 1, the backing layer 20 of the label sheet 10 extends as far as between the cover sheet 5 of the blister pack 1 and the self-adhesive substrate 11 of the label sheet 10, in such a manner that the intervening backing layer 20 locally, preferably in an edge region of the base element and cover sheet, prevents adhesion between the cover sheet and the self-adhesive substrate of the label sheet 10. This makes it easier to remove a label and also prevents the backing layer from unintentionally becoming detached from the self-adhesive side of the substrate 11 in this area.

[0033] It is also possible for the backing layer 20 of

the label sheet 10 to have information printed on it, in particular on the side which is away from the self-adhesive substrate 11.

[0034] As can be recognised in Figure 1, the label sheet 10 only projects beyond the base element 2 and the cover sheet 5 of the blister pack 1 on one side. It can also be recognised that the label sheet 10 completely covers the back side of the cover sheet 5.

[0035] A preferred method for the production of the blister pack 1 will now be explained partly with reference to Figures 2 and 3.

[0036] The starting point for the production of the blister pack 1 shown in Figure 1 is an assembly of two blister packs 1 in strip form without a label, as shown in Figure 2. These blister packs 1 bear against one another by means of a longitudinal side and are in this case connected to one another via an intermediate breakable connection. This breakable connection is in this case formed by a perforation line 22. It should be noted that the assembly shown in Figure 2 is generally known and can be produced with a high capacity. Assemblies of this type are currently in production in particular for the consumer market.

[0037] The other starting point for the production of the blister pack shown in Figure 1 is a label sheet 30 which is double the width of a label sheet 10.

[0038] The label sheet 30 has a substrate 11 which is self-adhesive on one side, which substrate 11 is originally covered on the self-adhesive side by a backing layer which is composed of a central backing-layer web (which has already been removed in Figure 3) and two outer backing-layer webs 20, which webs are separated from one another by cuts in the backing layer.

[0039] The label sheet 30 is also provided with perforation lines 12 which are at the same distance from one another as the perforation lines 6 of the base element and the cover sheet of the blister pack 1.

[0040] That side of the substrate 11 of the label sheet 30 which is away from the self-adhesive side can be printed using known means, for example a thermal printing device.

[0041] The central backing-layer web is preferably removed after the label sheet 30 has been printed. Then, the label sheet 30 is stuck to the cover sheet 5 of the assembly of blister packs shown in Figure 2 using the central web of the self-adhesive side of the substrate 11 which is now exposed. In a following step, the assembly obtained is then divided in two. In this step, it is possible for the label sheet 30 to be provided with a central perforation line, or it is also possible, for example, to use a cutting device. It will be clear that in the latter case the perforation line 22 in the assembly shown in Figure 2 could also be absent. It will also be clear that it is not necessary for the assembly shown in Figure 2 in combination with the label sheet 30 to be divided in two, but rather this combination can be supplied as an end product, in which case it is advantageous if the perforation line 22 is indeed present, as is the corresponding per-

foration line in the label sheet 30.

[0042] When printing the label sheet 30 it will at any rate be ensured that an indication of the name of the medicament and of the dose is printed on each detachable section of the blister pack 1.

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### Claims

1. Blister pack (1) for a plurality of doses of a medicament, comprising a base element (2) in the form of an elongate strip, which base element is provided in the longitudinal direction with a series of recesses (3) which project on the front side of the base element, each recess being designed to accommodate a dose of the medicament, which blister pack also comprises a cover sheet (5), which is attached to the rear side of the base element and covers the recesses, so that each dose of the medicament is enclosed in a recess (3),

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at least the base element being provided with perforations (6) or the like which allow the blister pack to be divided into discrete sections, which each comprise one recess (3) in which there is one dose of the medicament, a label sheet (10) being arranged against the rear side of the cover sheet (5) of the blister pack, which label sheet comprises a substrate (11) which is composed of one or more layers, is self-adhesive on one side and is stuck to the rear side of the cover sheet by means of the said self-adhesive side, and which substrate is provided with readable information on the side which is away from the self-adhesive side, which label sheet is also provided with perforations (12) or the like corresponding to the perforations (6) in the base element, so that when a discrete section is detached from the blister pack, a label remains stuck to the detached section of the blister pack,

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the self-adhesive nature of the label being such that the label can be detached from the blister pack by hand and the self-adhesive side can be stuck to another base, in particular a patient records card, characterized in that the label sheet projects beyond the periphery of the base element (2) in the direction which is transverse with respect to the longitudinal direction of the strip-like blister pack, the projecting part of the self-adhesive substrate of the label sheet being covered on the self-adhesive side by a backing layer (20).

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2. Blister pack according to claim 1, in which the backing layer (20) of the label sheet extends as far as between the cover sheet (5) and the self-adhesive substrate (11) of the label sheet, in such a manner

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that the backing layer (20) locally, preferably in an edge region along the side of the blister pack, prevents adhesion between the cover sheet and the self-adhesive substrate of the label sheet.

3. Blister pack according to claim 1 or 2, in which the backing layer of the label sheet is printed with information on the side which is away from the self-adhesive substrate.

4. Blister pack according to one or more of the preceding claims, in which the label sheet only projects beyond the base element of the blister pack on one side.

5. Blister pack according to claim 4, in which the label sheet completely covers the cover sheet of the blister pack.

6. Method for producing a blister pack according to one or more of the preceding claims, which starts from:

- an assembly of two blister packs in strip form, which lie with one of their longitudinal sides adjoining one another and which are preferably temporarily connected to one another via an intermediate break-off connection,
- a label sheet with a self-adhesive substrate, which substrate is covered by two backing-layer webs, which between them leave clear a central web of the self-adhesive substrate, the width of which label is greater than the assembly of the two adjoining blister packs,

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in which method the label sheet is stuck to the back side of the mutually adjacent blister packs by means of its self-adhesive central web, after which the assembly of the blister packs, with the label sheet stuck to it, is divided in two, for example by cutting.

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7. Method according to claim 6, which starts from a label sheet having a backing layer composed of a central backing-layer web and two outer backing-layer webs, which are separated from one another by cuts in the backing layer, in which method firstly the central backing-layer web is removed, before the label sheet is stuck to the assembly of the blister packs by means of the central web of the self-adhesive side.

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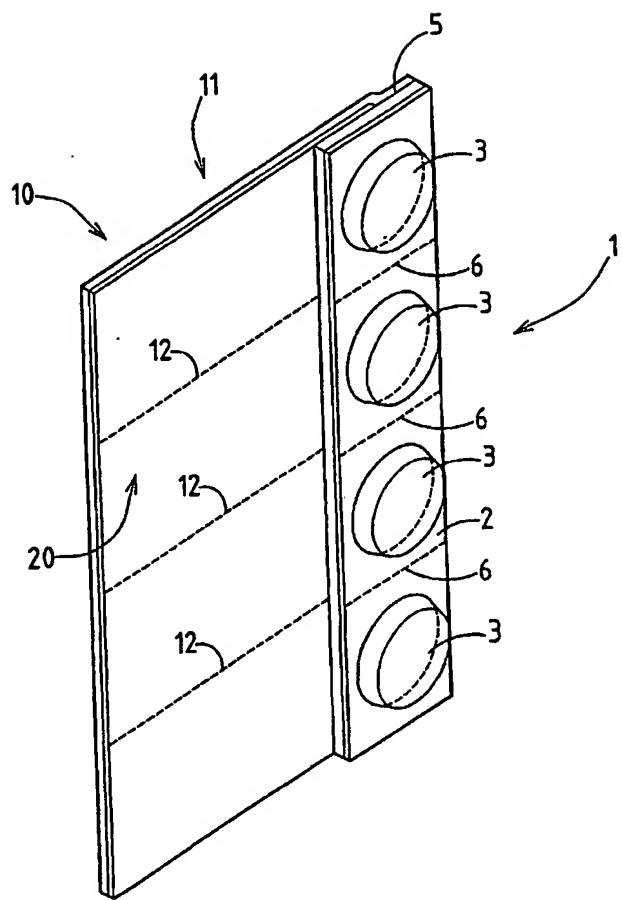


FIG. 1.

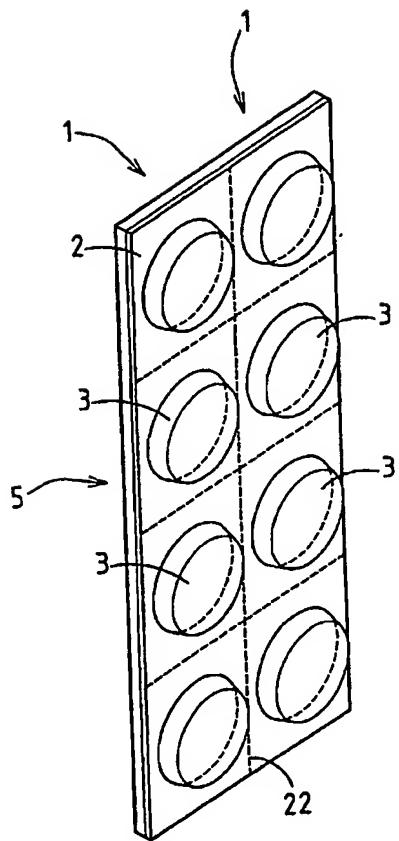


FIG. 2.

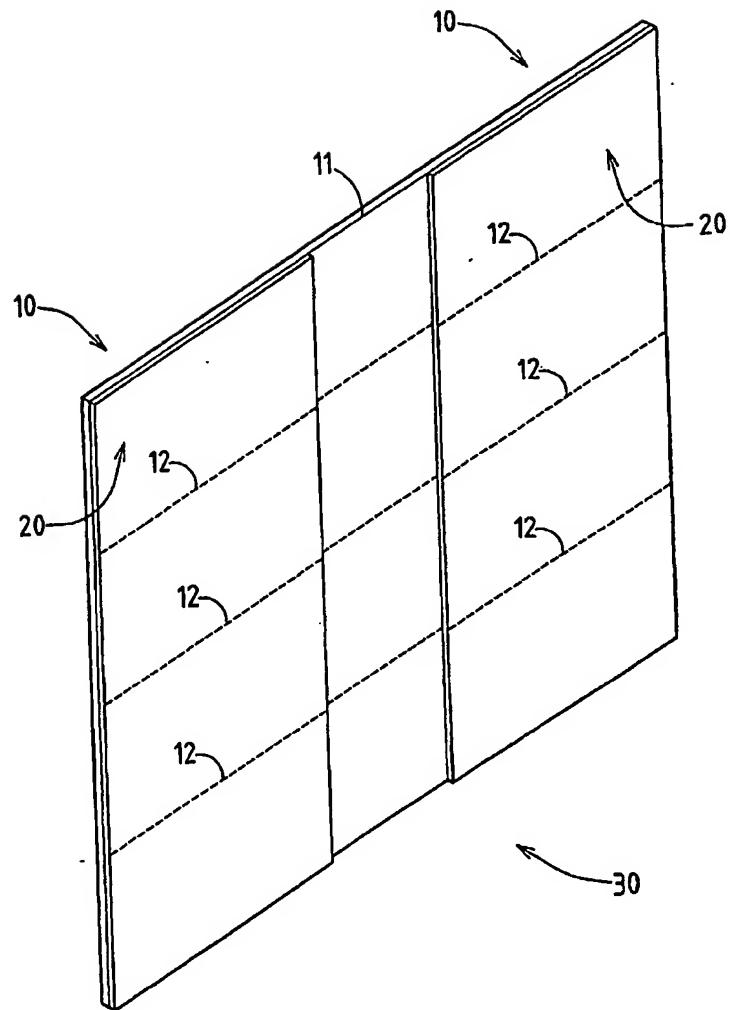


FIG. 3.



DOCUMENTS CONSIDERED TO BE RELEVANT																		
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<p>The present search report has been drawn up for all claims</p> <table border="1"> <tr> <td>Place of search</td> <td>Date of completion of the search</td> <td>Examiner</td> </tr> <tr> <td>THE HAGUE</td> <td>12 March 2002</td> <td>Pernice, C</td> </tr> <tr> <td colspan="3">CATEGORY OF CITED DOCUMENTS</td> </tr> <tr> <td colspan="3">           X: particularly relevant if taken alone            Y: particularly relevant if combined with another document of the same category            A: technological background            O: non-written disclosure            P: intermediate document         </td> </tr> <tr> <td colspan="3">           T: theory or principle underlying the invention            E: earlier patent document, but published on, or after the filing date            D: document cited in the application            L: document cited for other reasons            &amp; : member of the same patent family, corresponding document         </td> </tr> </table>				Place of search	Date of completion of the search	Examiner	THE HAGUE	12 March 2002	Pernice, C	CATEGORY OF CITED DOCUMENTS			X: particularly relevant if taken alone Y: particularly relevant if combined with another document of the same category A: technological background O: non-written disclosure P: intermediate document			T: theory or principle underlying the invention E: earlier patent document, but published on, or after the filing date D: document cited in the application L: document cited for other reasons & : member of the same patent family, corresponding document		
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